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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/545,436	04/07/2000	Gregory Prestas	PTI-108	9813

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PERKINS COIE LLP
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER
VOLPER, THOMAS E

ART UNIT	PAPER NUMBER
2697	5

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		Applicant(s)	
Office Action Summary	09/545,436		PRESTAS ET AL.	
	Examiner		**Art Unit**	
	Thomas Volper		2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-23_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-23_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____ .

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _4, 5_ .   6) ☐ Other: .

DETAILED ACTION

Claim Objections

1.   Claim 9 is objected to because of the following informalities: It is not clear whether

"said stored virtual connection information" in line 4 refers to the "information representative of

at least one of said allowable connection," in lines 4-5 of claim 7, or "a predetermined list of

allowable connections" in lines 9-10 of claim 1. Appropriate correction is required.

2.   Claim 11 is objected to because of the following informalities: "a existing SAN" in line

4 should be changed to --an existing SAN--.

3.   Claim 12 is objected to because of the following informalities: It is not clear what "said

connections" in line 3 refers to.   Appropriate correction is required.

4.   Claim 16 is objected to because of the following informalities: Line 3 recites the

limitation "said at least one initiator host," while the claims from which claim 16 depends,

claims 1 and 2, only provide basis for "a host initiator," lines 4-5 of claim 1. It is not clear

whether "said at least one initiator host" is a reference to "a host initiator." Appropriate

correction is required.

5.   Claim 19 is objected to because of the following informalities: "said registration

engines" should be changed to --said registration engine--. Appropriate correction is required.

6.   Claim 20 is objected to because of the following informalities: "said registration

commands" should be changed to --said registration command--. Appropriate correction is

required.

Claim Rejections - 35 USC § 112

7.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8.   Claims 4, 21 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9.   Claim 4 recites the limitation "said multiple host initiators" in line 3. There is insufficient antecedent basis for this limitation in the claim.

10.   Claim 21 recites the limitation "the health status " in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

11.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12.   Claims 1-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Blumenau et al. (US 6,493,825).

        Regarding claim 1, Blumenau discloses a virtual connection architecture and a host

initiator (see Figure 22). Blumenau also discloses a list of allowable connections (283) (see

Figure 23). Blumenau discloses a process of requesting access to a virtual port from a host,

indexing a virtual port mapping table with the host_index, matching S_IDs of the request with a

table entry, determining whether a match is made and accessing a private volume. The volume

accessed by the host may be accessed by a logical unit number (LUN) (col. 26, line 32 – col. 27,

line 35; also see Figures 27 and 28).

Regarding claim 2, Blumenau discloses the ability to have simultaneous multi host access

(col. 42, lines 30-33).

Regarding claim 3, Blumenau discloses connecting to a storage subsystem via a switch

that connects a number of loops to the storage subsystem (col. 40, lines 17-39; also see Figure

38). Each of these loops represents a common physical data channel because there are multiple

hosts on each loop.

Regarding claim 4, Blumenau discloses that encryption is used for data transfer between

a host and a data processing device (see Abstract). Encryption provides a protected end-to-end

data path

Regarding claim 5, Blumenau discloses switches for connecting to a storage subsystem

(see Figure 8)

Regarding claim 6, Blumenau discloses a private/shared flag that determines which way

the access process will branch based on whether the flag is set (col. 27, lines 30-51). Private and

shared represent the different levels of access permission.

Regarding claims 7 and 8, Blumenau discloses a memory (236) for storing information about the connections between hosts and storage volumes (col. 23, lines 20-37; also see Figure 21).

Regarding claim 9, Blumenau discloses using stored virtual connection information to validate subsequent requests for access (col. 23, line 62 – col. 24, line 27).

Regarding claim 10, Blumenau discloses a storage controller (27) for controlling access of the hosts to the storage volumes (26) (col. 5, lines 58-63). This storage controller represents the virtual connection manager of the present invention.

Regarding claim 11, Blumenau discloses no need to alter an existing operating system in any way.

Regarding claims 12 and 13, Blumenau discloses volume and access mapping information (269 and 270), which will only connect a host to a particular volume if it has permission to access that volume (col. 23, line 62 – col. 24, line 27). This security feature clearly works independently from the security of the individual host and any attached storage devices.

Regarding claim 14, Blumenau discloses that the storage devices may be magnetic disk drives, optical disk drives, tape drives, solid-state memory devices, or other storage devices (col. 5, lines 65-67).

Regarding claim 15, Blumenau discloses that the links between the storage adapters and storage devices may be SCSI or Fibre Channel fiber-optical loops (col. 7, lines 1-7).

Regarding claim 16, Blumenau discloses a plurality of host connected to the virtual SAN (see Figure 21). It is inherent that there is an interface between each host and the network (21)

otherwise there would be no way to transfer information between the storage devices and the

hosts.

Regarding claim 17, Blumenau discloses a graphical user interface (GUI) that permits the

system administrator to set up password protection, to modify a host's volume configuration, or

to read and write the physical and virtual port names of storage subsystem as defined in a

configuration database (col. 28, line 64 – col. 29, line 10). This GUI represents the registration

engine of the present invention. The GUI is able to recognize an "Install" command when a new

host controller port is introduced. This command writes the host's configuration information

into the volume configuration database (col. 29, lines 11-14). This "Install" command represents

the registration command of the present invention.

Regarding claim 18, Blumenau discloses that the GUI may recognize a "remove from

service" command to remove a host or host controller from service (col. 29, lines 33-37). This

represents the de-registration command of the present invention.

Regarding claim 19, Blumenau discloses a host controller on each host (see Figure 21).

The host controller represents the registration service of the present invention.

Regarding claim 20, Blumenau discloses that the GUI may recognize a "Configuration"

command to enter or modify a host's volume configuration information (col. 29, lines 28-32).

Regarding claim 21, Blumenau discloses that the Fibre Channel specifications provide a

mechanism for the network to automatically detect certain changes of state, which may indicate

that the configuration of the system has changed, such as link failure (col. 10, lines 38-51). It is

inherent that in order to automatically detect any changes, the network must have been

monitoring the network for changes. Link failure is an indication of the health status of a host.

Regarding claim 22, Blumenau discloses that topology reconfiguration occurs whenever a connection is added, deleted or modified in the data network. This may occur when the S_ID of a host controller port changes. The ports should login to the data storage subsystem to register the new S_IDs (col. 30, lines 63-67). This represents issuance of a periodic registration command, since it was cited earlier that in order to register a new host controller port, the GUI must receive an "Install" command.

Regarding claim 23, Blumenau discloses that the relationship between each host and the volumes assigned to the host are re-established automatically (col. 12, lines 54-66).

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Wolff (US 6,185,601) Dynamic Load Balancing of a Network of Client and Server Computers

14.   Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.
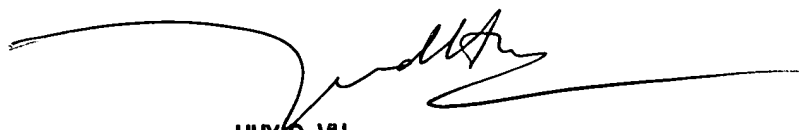
Thomas E. Volper

September 26, 2003

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600